

## 5. CONSTRUCTION METHODOLOGY & PHASING

### Introduction

- 5.1 This chapter describes the anticipated construction methodology and phasing of the Development. Consideration of likely significant effects on the environment that may arise during the construction phase, and any necessary mitigation measures, are provided within the respective technical chapters of this ES (chapters 6-12).
- 5.2 Planning for construction is necessarily broad at this stage and may be subject to modification. This chapter is based on reasonable assumptions and experience and allows assessment of the realistic “worst case” construction phase effects.

### Anticipated Programme

- 5.3 The construction of the Development is anticipated to commence in 2023, subject to gaining planning permission, and span approximately eight to ten years (as shown on Figure 5.1). Table 5.1 below sets out an indicative phasing strategy for the Development.

**Table 5.1: Indicative Phasing Strategy**

Zone	Zone Use Class	Construction Description	Years	
			Start	End
<b>A</b>	Retail (E(a)) Hotel (C1) Gym (E(d))	On-Site Infrastructure	2023	2024
	Food, Drink & Drive Thru Restaurant (E(b)/Sui Generis Drive Thru) Car Sales (Sui Generis) Creche (E(f)) Health Centre (E(g)) Employment (B2, B8, E(g)(i-iii)) Business (E(g)(i-iii))	Construction	2023	2026
<b>B</b>	Employment (B2, B8, E(g)(i-iii)) Business (E(g)(i-iii))	On-Site Infrastructure	2024	2025
		Construction	2024	2027
<b>C</b>	Employment (B2, B8, E(g)(i-iii)) Business (E(g)(i-iii)) Leisure Centre (E(d), F1(e), F2(b))	On-Site Infrastructure	2023	2024
		Construction	2027	2028
<b>D</b>	Employment (B2, B8, E(g)(i-iii)) Business (E(g)(i-iii)) Leisure Centre (E(d), F1(e), F2(b))	On-Site Infrastructure	2027	2028
		Construction	2028	2030
<b>E</b>	Residential (C3)	Construction	2023	2024

## Outline Construction Methodology

### Construction Machinery

- 5.4 Consideration has been given to the types of plant that are likely to be used during the construction works. The plant and equipment likely to be associated with each key element of the construction process is set out in Table 5.2.

**Table 5.2 Plant used during the Construction Process**

Type of Equipment	Required for Construction Phase
Tracked/wheeled 360 degree excavators	✓
Dumpers	✓
Mobile cranes	✓
Hand held tools including breakers (pneumatic and hydraulic)	✓
Power tools including percussion drills, cutting disks, pipe-threaders	✓
Piling equipment (including for sheet piling)	✓
Wheel washing plant	✓
Scaffold	✓
Mobile access platforms	✓
Delivery trucks	✓
Skips / Skip trucks	✓
Forklift trucks	✓
Ready mix concrete wagons	✓
Concrete placing booms & pumps	✓
Road sweepers	✓

### Access Road Construction and Enabling Works

- 5.5 The initial stages of the construction will include the new permanent access routes into the Development and internal roads. It is anticipated that the internal roads will be constructed up to base-course level and used for construction traffic routes as the Development is built.
- 5.6 Enabling works would take place in parallel with the access road construction and comprise:
- Demolition of built structures within the Site;
  - Arboricultural works – including the protection of trees/vegetation to be retained and removal of trees/vegetation where applicable;
  - Ecological works, where required;
  - Installation of any site hoarding and security fencing;
  - Ground modelling works including topsoil stripping and stockpiling for later use;
  - General clearance; and
  - Installation of temporary surface water management measures.

### Excavation and Sub-Structure Works

5.7 Excavation work, preparation of ground works and installation of foundations would take place at this initial stage. It is anticipated that piled foundations will only be necessary in some localised areas and this will be worked up at the detailed design stage.

5.8 Sub-structure works may involve:

- Localised re-grading within the Site to create level development platforms for the structures;
- Excavation for foundations and to allow installation of any below ground services; and
- Installation of ground slabs (ground bearing or suspended block) and supporting beams.

### Drainage works

5.9 Part of the sustainable drainage (SuDS) system will be constructed during the infrastructure works when installing the temporary surface water management measures. All temporary drainage of the construction works will be designed and managed to comply with BS 6031:2009 'The British Standard Code of Practice for Earthworks'<sup>i</sup>, which details methods that should be considered for the general control of drainage on construction sites.

5.10 All site works will be undertaken in accordance with CIRIA document 'Control of Water Pollution from Construction Sites'<sup>ii</sup> which promotes environmental good practice for control of water pollution arising from construction activities.

5.11 Construction vehicles will be properly maintained to reduce the risk of hydrocarbon contamination and will only be active when required. Construction materials will be stored, handled and managed with due regard to the sensitivity of the local water environment and thus reduce the risk of accidental spillage or release.

5.12 In accordance with the Control of Pollution (Oil Storage) (England) Regulations 2001<sup>iii</sup>, any tanks storing more than 200 litres of oil will have secondary bunding in accordance with Section 3(2)(a). Bunding will be specified having a minimum capacity of *"not less than 110% of the container's storage capacity or, if there is more than one container within the system, of not less than 110% of the largest container's storage capacity or 25% of their aggregate storage capacity, whichever is the greater."* Any above ground storage tanks will be located on a designated area of hardstanding. No underground storage tanks will be used during the construction period. Storage of liquids such as degreasers, solvents, lubricants and paints

will be in segregated, bunded enclosures.

- 5.13 The construction drainage system will be designed and managed to comply with BS6031 'The British Standard Code of Practice for Earthworks'<sup>iv</sup>, which details methods that should be considered for the general control of drainage on construction sites. Further advice is contained within the Geotechnical Design, General Rules (BS EN 1997)<sup>v</sup> which should be read in conjunction with Basis of Structural Design (BE EN 1990)<sup>vi</sup>.
- 5.14 The following control measures will also be incorporated into the Construction Environmental Management Plan (CEMP):
- Temporary surface water management system, for example oil interceptors, holding tanks to remove suspended sediment before discharge etc;
  - Equipment maintenance;
  - Wheel washing;
  - Covering stockpiles; and
  - Storage of substances in accordance with applicable legislation
- 5.15 Further information on the CEMP is provided below.

#### Construction of Superstructure

- 5.16 This stage will involve the construction of the main building structure and will include the pouring of concrete, the installation of steel frames, load bearing brick walls, reinforced masonry and the external building fabric.

#### Fit Out

- 5.17 Fit out of the Development will involve the installation of block work party walls, dry lining to internal walls, internal walls, domestic mechanical and electrical installations with fitted kitchens and bathrooms.

#### Landscaping

- 5.18 Landscaping works will involve some ground modelling works and the establishment of green spaces within the Site including soil preparation, tree and vegetation planting, seeding, construction of footpaths/cycle routes. The ground modelling works will be undertaken concurrently with the site preparation and substructure works outlined above.

### **Material and Resource Use**

- 5.19 The primary construction materials to be used will include concrete, brick, steel post and beams and timber. Where possible, materials and resources used during the construction of the Development will be sourced from the local area. A proportion of timber will be purchased from responsible forest sources. In terms of material selection, 'A' rated materials from the Building Research Establishment's Green Guide to Specification<sup>vii</sup> will be preferred.

### **Construction Phase Vehicle Movements**

- 5.20 Construction phase vehicle movements will be managed to minimise the impact on the local road network. Further discussion is provided in Chapter 9 Transport and Access. HGV movements would be dispersed across the working day outside of the AM and PM peak periods. The arrival and departure of light vehicles would be concentrated during the morning and evening periods. Both HGV and light vehicle movements would be less than the predicted levels of traffic during the operational phase of the Development.

#### Construction Traffic Access and Management

- 5.21 Construction traffic is likely to access the Site via the main distributor roads surrounding the site, including Stanifield Lane, Lostock Lane (A582) and A49 Wigan Road. Once the primary access to the Site is constructed during the first phase of development, vehicles will be able to access the Site from the Strategic Road Network via the M65 and M6. All traffic will be encouraged to avoid local settlement centres such as Bamber Bridge and Leyland.
- 5.22 If abnormal or oversized loads are required to deliver materials to the Site, notice will be given to SRBC/LCC, depending on the routing, and also the Police, the Fire Brigade, and other emergency services, sufficiently in advance of the required closure or diversion dates. Should any hazardous materials arise during the course of the works, these materials will be transported to a licensed disposal site using permitted routes as identified in the Construction Traffic Management Plan (CTMP).
- 5.23 All vehicle unloading will take place within the Site and will not affect public highways or adjacent occupiers.
- 5.24 All management of construction traffic and access will be carried out in accordance with a Construction Traffic Management Plan as set out below:

- Planning and managing both vehicle and pedestrian routes;
- The elimination of reversing, where possible;
- Safe driving and working practices;
- Protection to the public;
- Adequate visibility splays and sight lines;
- Provision of signs and barriers; and
- Adequate parking for off-loading storage areas.

### **Controls to Protect the Environment**

5.25 The environmental controls (or mitigation measures) to eliminate, reduce or offset likely significant adverse effects on the environment during the construction phase (as identified above) are identified below. It is anticipated that these controls will be secured by appropriately worded planning conditions or obligations:

- Preparation of a CEMP, including the CTMP, which clearly sets out the methods of managing environmental issues for all involved with the construction works, including supply chain management;
- Requirement to comply with the CEMP included as part of the contract conditions for each element of the work. All contractors tendering for work will be required to demonstrate that their proposals can comply with the content of the CEMP and any conditions or obligations secured through the planning permission;
- In respect of necessary departures from the above, procedures for prior notification to LCC, as appropriate, and affected parties will be established;
- Establishing a dedicated point of contact and assigning responsibility to deal with construction related issues if they arise. This will be a named representative from the construction team;
- Production of a newsletter to be circulated to the surrounding neighbours and authorities; and
- Regular dialogue with LCC and the local community.

5.26 The preparation of a CEMP is an industry standard and established method of managing environmental effects resulting from construction works.

5.27 The CEMP will be submitted to LCC (and other statutory authorities) prior to the commencement of the works. Compliance with the CEMP will be to be secured by planning condition. The structure of the CEMP will include the following:

- A table showing the objectives, activities (mitigation/optimisation measures) and responsibilities for the implementation of those activities;
- The broad plan of the work programme including working hours and delivery times;
- Details of prohibited or restricted operations (location, hours etc.);
- Institutional arrangements for its implementation and for environmental monitoring: responsibilities, role of the environmental authorities and participation of stakeholders;
- Contact during normal working hours and emergency details outside working hours;
- Provision for reporting, public liaison and prior notification of particular construction related activities;
- The mechanism for the public to register complaints and the procedures for responding to such complaints; and
- The details of proposed routes for HGVs travelling to and from the Site.

#### Site Offices & Welfare Accommodation

- 5.28 Specific offices and accommodation for construction staff will be required and located on-site.

#### Hours of Work

- 5.29 Working hours on the Site will be agreed with LCC through the CEMP. However, it is likely that standard hours of work will be adhered to. These are:

- Monday to Friday, 8am to 6pm;
- Saturday, 8am to 1pm; and
- Sunday and Bank Holidays, no noisy activities on-site (if works take place).

- 5.30 All work outside these hours will be subject to prior agreement of, and/or reasonable notice to SRBC/LCC as appropriate.

- 5.31 Night-time working will be restricted to exceptional circumstances, and internal works to buildings. By arrangement, there may be some out of hours construction deliveries made to the Site.

- 5.32 Specific offices and accommodation for construction staff will be required and located on site.

#### Management of Construction Works

- 5.33 All contractors will be required to complete a method statement and risk assessment and

obtain a works permit from the Applicant prior to commencement on Site.

#### Response to Complaints

- 5.34 Any complaints will be logged on-site and, where necessary, reported to the relevant individual within SRBC/LCC, as appropriate, (and vice versa) as soon as practicable.

#### Prior Notice

- 5.35 In the event of unusual activities or events, these will be notified to LCC, as appropriate, and relevant property owners or occupiers in advance. The relevant activities will be agreed with SRBC, as appropriate, once the detailed programme of construction is defined. This will include:

- Necessary night-time, weekend or evening working (outside core areas) of a type which may affect properties; and
- Road or footpath closures/diversions and movements of wide loads (unlikely to be required).

- 5.36 The community will be kept informed during the construction phase through press adverts, LCC, and through direct notification to Parish Councils as appropriate.



## REFERENCES

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- i BS 6031:2009 The British Standard Code of Practice for Earthworks.
- ii CIRIA C532 (2001) Control of Water Pollution from Construction Sites Guidance for consultants and contractors
- iii The Control of Pollution (Oil Storage) (England) Regulations 2001/2954
- iv British Standards Institution (December 2009) BS6031:2009 Code of Practice for Earthworks
- v British Standards Institution (December 2004) BS EN 1997-1:2004 Eurocode 7. Geotechnical Design. General Rules.
- vi British Standards Institution (2002) BS EN 1990: 2002 Basis of Structural Design
- vii Building Research Establishment Online Resource, available via <http://www.bre.co.uk/greenguide>